

16.0 Navigation and Transportation

16.1 Introduction

This chapter describes the existing navigation and transportation conditions within the project area, evaluates the potential effects of the proposed project on navigation and transportation, and recommends mitigation, to reduce or eliminate identified significant adverse impacts. In addition, the chapter considers the effects of the alternatives upon navigation and transportation, in a comparative form with the proposed project/action.

16.2 Environmental Setting/Affected Environment

The following is a description of the existing environmental conditions in the project area. The description of the project area is organized into the following subsections: navigation features; roadways; public transportation; pedestrian and bicycle transportation; railways; aviation facilities; and car ferries, as follows.

16.2.1 Navigation Features

The waterways of the Sacramento-San Joaquin Delta serve both commercial and recreational vessels. Deep draft ocean-going vessels are restricted to the Stockton Deep Water Ship Channel and the Sacramento Deep Water Ship Channel, which serve the inland ports of Stockton and Sacramento. These dredged channels provide access to vessels drawing up to 35 feet. Approximately five million tons of cargo are handled annually by the two ports. Both of these deep water channels lie well away from the proposed project facilities. Most of the waterways in the immediate project vicinity are navigable by small craft. These include a range of recreational vessels, from rowboats to large houseboats and cabin cruisers, engaged in such activities as fishing, water skiing, and cruising. The smaller commercial vessels include towing and salvage vessels, clamshell dredges, dredges for repair and maintenance of levees and channels, and pile driving vessels.

The smaller waterways adjacent to the proposed project facilities are shown on Nautical Chart 18661, Sacramento and San Joaquin Rivers, California: National Oceanic and Atmospheric Administration, US Department of Commerce, Edition 21, May 1992, and are described in the following, beginning near the Clifton Court Forebay. All the water depths are given in feet in relation to mean-low low water (mllw).

The proposed intake for ISDP would be constructed at the northeast corner of the Clifton Court Forebay, at the confluence of West Canal, Old River, Victoria Canal, North Canal, and Italian Slough. The West Canal is a straightened portion of the Old River and forms the eastern perimeter of Clifton Court Forebay. The West Canal/Old River in this vicinity has a controlling depth of ten feet, including the portion of Old River immediately north of the forebay that is to be dredged as a part of ISDP. Victoria Canal and North Canal are parallel canals that begin at Old River and extend toward the northeast. Their controlling depths are six and 11 feet,

respectively. Italian Slough forms the northern and northwestern perimeters of the Clifton Court Forebay. The nautical chart shows the slough has a controlling depth of eight feet, which allows easy access for small vessels.

The Middle River barrier would be constructed within a 10.0 mile-long stretch of the Middle River from about the Borden Highway Bridge at Victoria Canal and Trapper Slough to the confluence of Middle River with Old River. Nautical Chart 18661 indicates that this stretch of Middle River is not navigable. Field observations confirm that shallow water and abundant snags severely limit boating in this area.

The barriers to be constructed on the Old River, near the Delta-Mendota Canal on the west, and the San Joaquin River on the east, would affect a 19.0-mile stretch of the Old River. Nautical Chart 18661 indicates the controlling depth of Old River as being seven feet deep at mean lower low water from the Delta-Mendota Canal to Holly Sugar Factory; and five feet deep from there to the head of Old River at the San Joaquin River. The Nautical Chart indicates the controlling depth of the San Joaquin River to be three feet upstream and downstream of its confluence with Old River, immediately adjacent to the proposed barrier.

The proposed barrier at the Grant Line Canal would affect an 8.0-mile length of the parallel canals, Grant Line Canal and Fabian and Bell Canal. The 8.0-mile length extends from the western ends of the canals at Old River near the Delta-Mendota Canal, to their eastern terminus at the Old River near Holly Sugar Factory. Nautical Chart 18661 does not comment upon the navigability of the canal, but the canal is known to be a popular recreational boating area. The Tracy Oasis Marina is located on the canals, about five miles east of the proposed barrier site.

DWR has conducted boat surveys at the proposed barrier locations to determine the level of usage and types of recreational boating at each site. The surveys were conducted over four years from 1991 to 1995 (excluding 1994). Boats were counted along the waterways on several different dates, including weekdays, weekends and holidays from May to September. Generally, the surveys showed that weekends and holidays during the late spring, summer and early fall are very busy boating periods with the primary usage by water skiing boats and jet skis. The full Boat Survey Report (DWR 1996b) is found in Appendix 7, but a summary of the results is given in Chapter 13.0, Recreation.

The recreational navigation in the immediate project area is facilitated mainly by the individual boater's knowledge and familiarity with the area, supplemented by published sources of information and occasional aids to navigation. Navigational charts are available commercially and timely local information is published by the U.S. Coast Guard (USCG) in the Notice to Mariners. Aids to navigation such as buoys and day markers, both USCG and privately maintained, are present in some heavily used areas. The existing temporary barriers are marked by buoys and day markers to avoid conflict with boaters. When in place, the temporary barriers are equipped with facilities to portage most recreational craft from one side to the other.

16.2.2 Roadways

The immediate project area is rural in character and is generally served by two-lane roads (see Figures 16-1 and 16-2). These rural roads provide local access to individual properties, and access to State Highway 4, Interstate Highway 205 (I-205), and Interstate Highway 5 (I-5). Highway 4 is a two-lane highway connecting Contra Costa County to points to the east. It crosses the project area in an east-west direction, three miles north of Clifton Court Forebay and 0.75 miles north of the proposed Middle River barrier. I-205 is a 15-mile east-west connector route between I-5 and I-580, west of the project area. I-205 is a four-lane freeway that carries heavy traffic during both the weekday commute periods and weekend recreational travel times. It crosses the general project area in an east-west direction, about six miles south of Clifton Court Forebay and three miles south of the proposed barrier in Old River at the San Joaquin River. I-5 is a major north-south transportation corridor, located about 1.5 miles east of the confluence of the Old and San Joaquin rivers.

Two county roads, Byron Highway and Tracy Boulevard, are locally important routes that pass in close proximity to the proposed ISDP facilities. They both trend generally north-south and are links between Highway 4 and I-205. Byron Highway originates in Byron and passes northwest-southeast through the project area, paralleling the Southern Pacific Railroad along the south side of Clifton Court Forebay. Tracy Boulevard runs north-south about one mile east of the proposed barrier on Middle River, about five miles east of Clifton Court Forebay and the two proposed barriers at Grant Line Canal and Old River at the Delta-Mendota Canal, and about six miles west of the proposed Old River barrier at the San Joaquin River. Both of these County highways would be important routes during the construction of ISDP.

The average daily traffic (ADT), the roadway capacities, and levels of service (LOS) are known for these roadways through data collected by Contra Costa County, San Joaquin County, and the California Department of Transportation (Table 16-1). New 24-hour counts were recorded on November 1, 1994, for this study on Byron Highway, north and south of Clifton Court Forebay. Five local measurement stations on I-5 show existing ADT volumes ranging from 63,000 to 99,000 vehicles per day (vpd), roadway capacity of 120,000 vpd, and LOS ranging from A to D, which are all in the acceptable range (Table 16-2). The segment of I-5 having LOS D is between Country Club Boulevard and Charter Way. Two stations on I-205 show ADT volumes of 63,000 to 65,000, a capacity of 80,000, and levels of service C and D, both of which are acceptable. The segment on I-205 having LOS D is between Tracy Boulevard and Patterson Boulevard. Six stations on Highway 4 shows ADT volumes ranging from 5,900 to 17,000, capacities of 20,000 to 30,000, and levels of service from A to C, which are in the acceptable range. Five stations on Byron Highway show ADT volumes of 6,700 to 11,800, a capacity of 20,000, and a LOS of A, which is excellent. Three stations on Tracy Boulevard show ADT volumes of 1,350 to 3,400, a capacity of 20,000 vehicles per day, and a LOS of A, which is excellent.

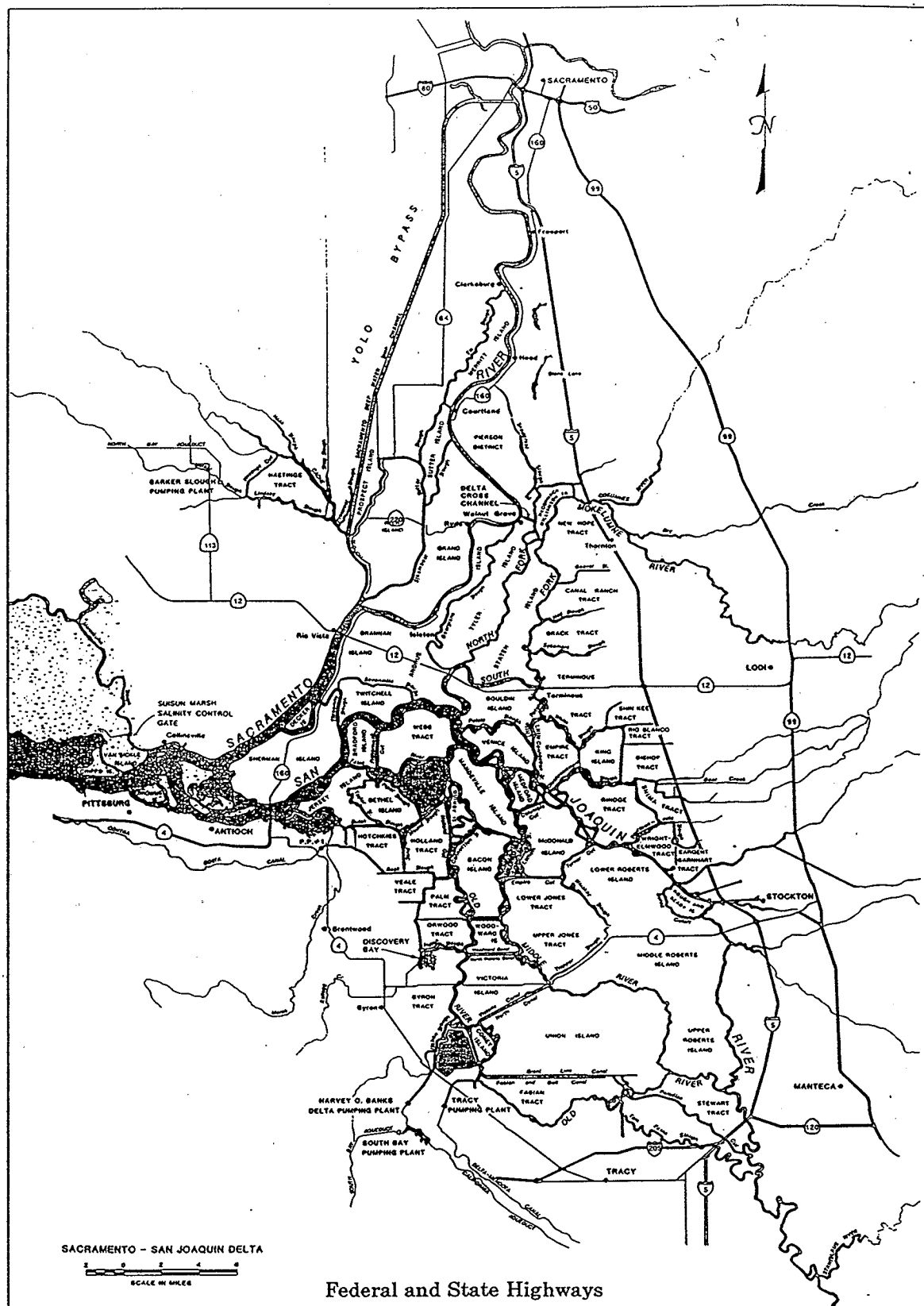


Figure 16-1. Federal and State Highways.

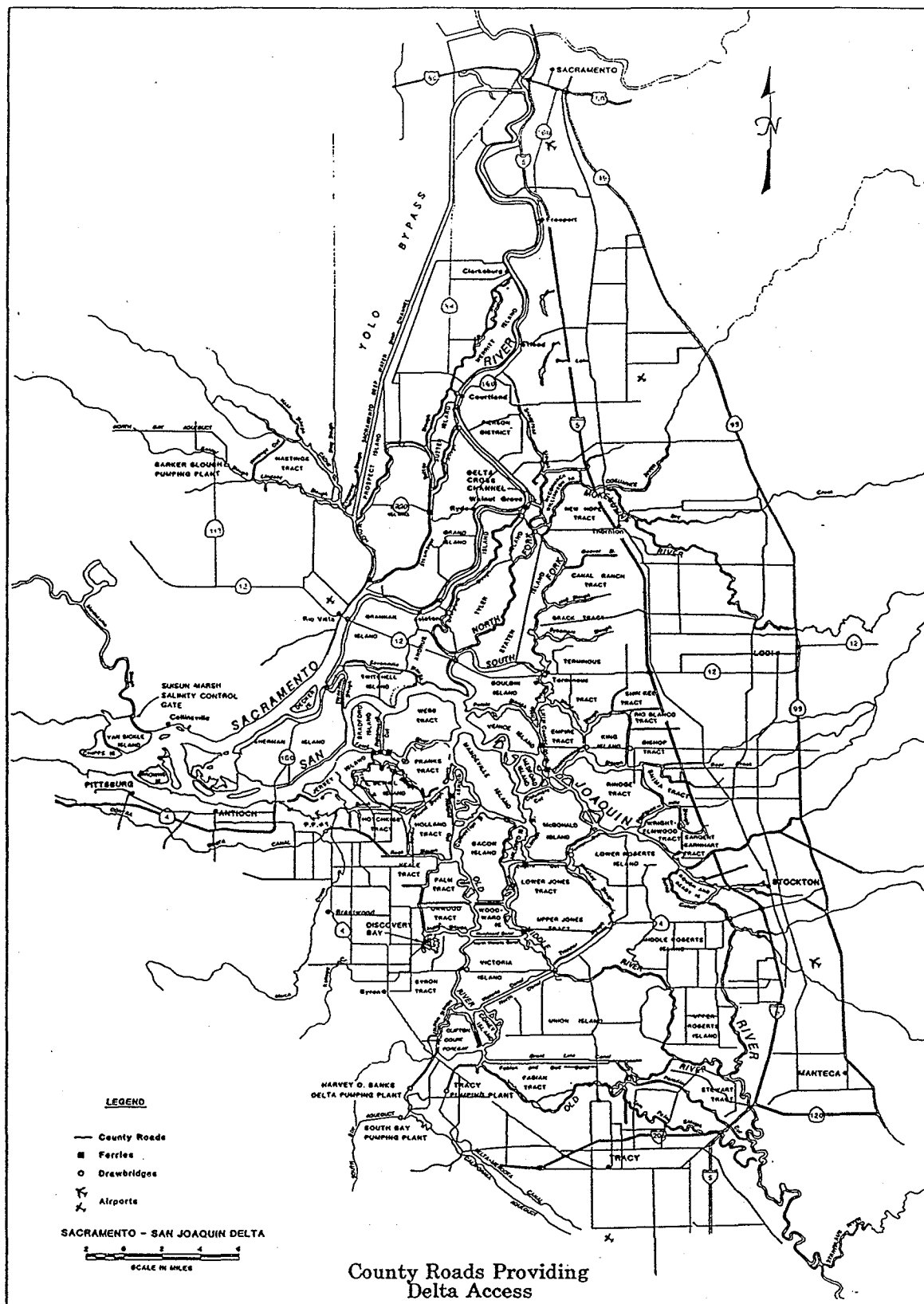


Figure 16-2. County Roads Providing Delta Access.

Table 16-1 Existing Levels of Service and Traffic Volumes

Roadway	Segment	No. of Lanes	Speed Limit (mph)	Median	Roadway Classification	Average Daily Traffic		V/C Ratio (decimal)	Level Of Service
						Existing (vpd)	Capacity (vpd)		
Route 4	Interstate 5 - Fresno Ave.	3	55	TWLT	Highway	17,000	30,000	0.57	A
Route 4	Fresno Ave. - Roberts Island Rd.	2	55	Undivided	Highway	8,600	20,000	0.43	A
Route 4	Roberts Island Rd. - Tracy Blvd.	2	55	Undivided	Highway	6,000	20,000	0.30	A
Route 4	Tracy Blvd. - San Joaquin County Line	2	55	Undivided	Highway	5,900	20,000	0.30	A
Route 4	San Joaquin County Line - Discovery Bay Blvd.	2	55	Undivided	Highway	5,900	20,000	0.30	A
Route 4	Discovery Bay Blvd. - Byron Highway Junction	2	55	Undivided	Highway	16,000	20,000	0.80	C
Byron Highway	Route 4 Junction - Diablo Rd.	2	55	Undivided	Highway	11,800	20,000	0.59	A
Byron Highway	Diablo Rd. - Byron Hot Springs Rd.	2	55	Undivided	Highway	11,400	20,000	0.57	A
Byron Highway	Byron Hot Springs Rd. - Mountain House Rd.	2	55	Undivided	Highway	10,600	20,000	0.53	A
Byron Highway	Mountain House Rd. - Patterson Pass Rd.	2	55	Undivided	Highway	9,400	20,000	0.47	A
Byron Highway	Patterson Pass Rd. - Corral Hollow Rd.	2	55	Undivided	Highway	6,700	20,000	0.34	A
Interstate 205	I-5/205 Junction - Tracy Blvd.	4	65	Divided	Freeway	63,000	80,000	0.79	C
Interstate 205	Tracy Blvd. - Patterson Blvd.	4	65	Divided	Freeway	65,000	80,000	0.81	D
Route 120	Interstate 5 Junction - Yosemite Ave.	4	55	Divided	Freeway	42,000	80,000	0.53	A
Interstate 5	Country Club Blvd. - Charter Wy.	6	55	Divided	Freeway	99,000	120,000	0.83	D
Interstate 5	Charter Wy. - French Camp	6	55	Divided	Freeway	80,000	120,000	0.67	B
Interstate 5	French Camp - Lathrop Rd.	6	55	Divided	Freeway	63,000	120,000	0.53	A
Interstate 5	Lathrop Rd. - Route 120 Junction	6	55	Divided	Freeway	63,000	120,000	0.53	A
Interstate 5	Route 120 Junction - I-5/205 Junction	6	55	Divided	Freeway	92,000	120,000	0.77	C
Tracy Blvd.	Route 4 - Clifton Court Rd.	2	55	Undivided	Rural Road	1,350	20,000	0.07	A
Tracy Blvd.	Clifton Court Rd. - Grant Line Rd.	2	55	Undivided	Rural Road	3,190	20,000	0.16	A
Tracy Blvd.	Grant Line Rd. - 11th St.	5	35	TWLT	Arterial	3,400	30,000	0.11	A

TWLT= Two Way Left Turn Lane

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Table 16-2 Level of Service Description

Level of Service	Description	Volume/Capacity Ratio
A	No physical restriction on operating speeds.	0-0.60
B	Stable flow with few restrictions on operating speeds during peak hours.	0.61-0.70
C	Stable flow, higher volume, more restrictions on speeds during peak hours. Limit of acceptable operations in rural areas and small cities.	0.71-0.80
D	Stable flow, high traffic volumes discourage non-vehicular activity on the street. Congestion occurs during peak periods. Limit of acceptable operations on freeways and in large cities.	0.81-0.90
E	Peak period congestion extends beyond one peak hour, design improvements may be required to accommodate high traffic volumes.	0.91-1.00
F	Volume is greater than functional capacity of roadway. Action is required to increase road capacity (widen and upgrade roadway classification) or reduce volume.	Over 1.00

Notes:

1. Source: Based on National Academy of Science, Highway Capacity Manual, 1965, and Interim Materials on Highway Capacity Manual, January 1980.
2. Physical restrictions refers to interaction between motorists.
3. Functional capacity of roadway is derived from the number of lanes, type and frequency of intersection controls, and environmental factors related to the type of adjacent land use.

16.2.3 Public Transportation

Limited bus service, primarily demand-responsive, provides both rural and urban public mass transit within the project vicinity. Several fixed route and dial-a-ride systems operate in the project area, as follows:

The Livermore-Amador Valley Transportation Authority (WHEELS). This demand-responsive system services Dublin, Pleasanton, Livermore and areas of unincorporated Alameda County.

Eastern portion of Contra Costa County. Some routes are fixed while others are scheduled by demand.

Stockton Metropolitan Transit District (SMTD). SMTD mainly serves the cities of Stockton, Manteca, and Tracy, with some routes to Lawrence Livermore Laboratory.

County Area Transit (CAT). CAT operates a general public fixed-route service, and an elderly/handicapped dial-a-ride program.

The City of Tracy. The City of Tracy has a general public dial-a-ride service called Tracy Trans and an elderly/handicapped taxi program.

16.2.4 Bikeways

Caltrans defines the following three types of bikeways:

Class I - a completely separated right of way for the exclusive use of bicycles or pedestrians with cross-flow minimized;

Class II - a striped lane for one-way bike travel in each direction within the paved area (typically on the shoulder) on a street or highway; and

Class III - shared use of lanes with pedestrian or motor vehicle traffic (typically at the right edge of the traveled way, without a bike lane stripe).

Several bikeways exist within the project vicinity. Major bicycle routes in the project area include a Class II bike lane along Byron Highway and a Class I bike route along the California Aqueduct and Bethany Reservoir in Alameda County. An additional Class II and III bikeway extends south along Midway Road, crosses the Delta-Mendota Canal and California Aqueduct, intersects I-580, then joins a bikeway along Patterson Pass Road.

The Santa Fe Railway system provides a corridor for a bikeway to the northwest of the project area. The Santa Fe line runs southeast from the Byron Highway. The bikeway parallels the Santa Fe line and then forks to follow Highway 4 southeast of the project area.

16.2.5 Rail

Three major railways exist within the project area: the Southern Pacific Transportation Company (SP) line; the Atchison, Topeka and Santa Fe (Santa Fe) corridor; and the Union Pacific/Sacramento Northern (UP) line. The SP line is a double track trunk route which carries the most freight traffic of all the railways in the project area. The track parallels Byron Highway with one at-grade crossing directly west of Clifton Court Forebay. The Santa Fe line follows an east-west alignment to the north of the project vicinity. This line is used for five daily AMTRAK passenger runs between the Bay Area and the Sacramento Valley, and is the only line that passes directly through the Delta lowlands and requires levees for protection. The UP line also follows an east-west alignment in the project area, but passes to the south of Tracy.

16.2.6 Aviation Facilities

A variety of air transportation facilities are located throughout the project area, ranging from large metropolitan airports accommodating large jets to airstrips accommodating only twin engine planes and ports accommodating only seaplanes. Stockton Metropolitan Airport, four miles north of Manteca, is the only airport in the project area capable of handling large aircraft. Byron Airport, Antioch Airport, and Tracy Municipal Airport are general aviation airports, providing service to light aircraft. Smaller aviation facilities in the project vicinity include New Jerusalem Airport, a small unattended strip four miles southeast of Tracy; Paradise Airfield, approximately one-quarter mile south of I-205; and an unnamed strip south of Grant Line Canal and Fabian and Bell Canal near Tracy Boulevard. In addition, as many as 30 small agricultural airstrips exist within the project vicinity. Seaplane access to the Delta is provided at Lost Isle, off the eastern tip of McDonald Tract in the Turner Cut.

16.2.7 Car Ferries

Several car ferries still exist today in the Delta. Most are located outside of the project area, but one, the Woodward Island cable ferry, is located on Middle River near Woodward Canal and North Victoria Canal. The Woodward Island cable ferry is a private ferry from Upper Jones Tract to private property on Woodward Island.

16.2.8 Future Roadway Improvements

Alameda, Contra Costa, and San Joaquin counties are currently studying improvements to a variety of roadways in the project area, including widening of portions of I-5, Highway 4, Highway 120, and Highway 12. In addition, a new community, Mountain House, is proposed for western San Joaquin County, within the project area. The Mountain House site is bordered to the north by Old River; to the south by I-205; Alameda County to the west; and Patterson Pass Road and Wicklund Cut to the east. The Mountain House project, currently in the environmental

review process, would add about 44,000 people to this area over the next 20 to 40 years. No construction activity related to the proposed Mountain House community is expected to occur within the ISDP project construction time frame, nor are any of the proposed area roadway improvements.

16.3 Environmental Impacts/Consequences

16.3.1 Introduction

Review of the construction and operation of the proposed project facilities, and their construction and operation, determined that the construction of the ISDP facilities would likely have short-term effects upon traffic and navigation in the immediate project area. Navigation conditions are typically related to the absence or presence of obstacles to travel on area waterways. Therefore, it was also determined that the direct operational effects of the project were likely to be limited to the effects the proposed barriers might have upon navigation. On the other hand, transportation impacts in the project vicinity are generally construction-related, as the proposed project elements do not directly generate traffic.

The evaluation of growth-inducing impacts elsewhere in the document determined that ISDP would not create significant population growth in the service areas. Therefore there would be no significant growth-related indirect impacts of ISDP upon transportation. The review also did not identify any ways that the construction or operation of ISDP might affect parking facilities, circulation patterns, public transportation, railroads, aviation facilities, car ferries or pedestrians within the project area. Consequently, none of these issues was evaluated further. The following discussion outlines the methodology, assumptions, and criteria used to identify significant adverse impacts, then provides an evaluation of the potential construction- and operation-related environmental consequences of ISDP.

16.3.2 Methodology

Transportation impacts are typically evaluated on a regional, as well as site-specific, level as traffic generated by an action contributes to the overall conditions on area roadways. In the case of the ISDP and its alternatives, a series of actions are contemplated, each of which would generate additional traffic in the project area. As the construction of all project facilities is expected to commence simultaneously, this analysis took certain factors into account. Specifically: 1) vehicles approaching and leaving construction sites would be traveling substantial distances, based on the availability of construction materials and areas of worker residence; and 2) due to the proximity of the proposed facility sites and the limited number of access roads in the project area, vehicles traveling to and from different sites would likely use similar routes. Consequently, an accurate determination of transportation impacts would need to consider traffic generated by implementation of all actions of the proposed ISDP, rather than the individual contributions of each proposed facility. With this in mind, the following calculations and assumptions were used to determine the impacts of ISDP construction on project area transportation conditions.

The directional distribution of the construction traffic generated by each element was estimated based on the locations of nearby aggregate and concrete production sites and the likely residence locations of workers. By combining the traffic generated by the project elements with the directional distribution, the volume of traffic added to the roads near the project element sites can be calculated.

Using information described in Section 16.2.2 above, any existing capacity deficiencies for nearby project area roadway segments were identified, to facilitate analysis of traffic conditions with construction traffic added (see Table 16-1). "Deficiencies," as identified in this analysis, are expected levels of service in excess of LOS C. The additional traffic that construction activities would generate in association with each of the proposed facilities was calculated (Table 16-3), and the distribution of this additional traffic on area roadways was determined (Table 16-4). Table 16-5 displays the results of these calculations as they relate to existing roadway conditions. The potential combined effects of project construction and other potential development in the project area was analyzed by adding background growth over the expected construction period. The background growth rate was estimated by comparing published data for Highway 4 over the last six years. Annual growth since 1986 has been at the very high rate of five percent per year, based on data from 1986, 1991, and 1992 for the segment of Highway 4 north of Clifton Court Forebay. Growth in I-5 near Highway 4 has occurred at a similar rate. Assuming this growth rate will continue throughout the construction period, the cumulative effects were analyzed by evaluating a traffic scenario with the background growth added to existing plus construction traffic. Traffic volumes and levels of service for the cumulative scenario are shown in Table 16-6.

The criteria used to determine whether identified impacts are significant and adverse were developed through a review of the CEQA Guidelines, the CEQ NEPA Regulations, and the CWA 404(b)(1) Guidelines. For the purposes of this analysis, navigation impacts are considered significant if implementation of a proposed action would create a substantial hazard to navigation or substantially affect the ease of navigation. Transportation impacts are considered significant if implementation of a proposed action would: 1) Cause an increase in traffic which is substantial in relation to the existing traffic volume and capacity of the roadway system; 2) Generate substantial additional vehicular movement; 3) Substantially affect existing parking facilities, or create a demand for new parking; 4) Substantially alter present patterns of circulation or movement of people and/or goods; 5) Substantially alter rail or air traffic; or 6) Substantially increase traffic hazards to motor vehicles, bicyclists, or pedestrians.

A circulation impact on local roadways is deemed to be significant when the level of service (LOS) deteriorates below LOS C conditions, or an increase in V/C ratio of 0.02 occurs at study intersections operating below LOS C conditions. An impact to the regional highway system is deemed to be significant when the level of service deteriorates below LOS D conditions.

TABLE 16-3 TRAFFIC VOLUMES GENERATED BY FACILITY CONSTRUCTION

PROPOSED FACILITY	CONSTRUCTION PERIOD	TRUCKLOADS	WORK CREWS	TRUCK TRAFFIC	CREWS' TRAFFIC	TOTAL TRAFFIC
	(months)	(# of trucks)	(# of people)	(vehicles/day)	(vehicles/day)	(vehicles/day)
CLIFTON COURT FOREBAY NORTHERN INTAKE	36	12,360	100	33	80	113
OLD RIVER DREDGING	24	2	10	0	8	8
OLD RIVER/SAN JOAQUIN BARRIER	30	973	80	3	64	67
MIDDLE RIVER BARRIER	18	3,994	50	11	40	51
GRANT LINE CANAL BARRIER	36	4,095	90	11	72	83
OLD RIVER FLOW CONTROL STRUCTURE	30	2,682	100	7	80	87
ENLARGEMENT OF CLIFTON COURT FOREBAY	60	450,000	25	720	20	740
NORTH VICTORIA CANAL INTAKES	30	14,000	140	45	112	157
ITALIAN SLOUGH INTAKE	18	3,500	40	19	32	51
EXPANDED EXISTING CLIFTON COURT FOREBAY	30	3,500	60	11	48	59
ISDP TOTALS				64	344	408
ALTERNATIVE 16.5.1 TOTALS				797	388	1185
ALTERNATIVE 16.5.4 TOTALS				83	376	459
ALTERNATIVE 16.5.5 TOTALS				43	312	355
ALTERNATIVE 16.5.6 TOTALS				51	288	339

ASSUMPTIONS: 2.5 CREW PEOPLE/VEHICLE
250 WORKING DAYS/YEAR

Table 16-4 ISDP Traffic Distributions by Facility

ROADWAY	SEGMENT	CHANNEL DREDGING		CHATEAUCOURT FOREBAY/INTAKE		GRANTEE CANAL		OLD RIVER/FLOW CONTROL STRUCTURE		MIDDLE RIVER		OLD RIVER FISH CONTROL		ALL FACILITIES	
		Truck	Crew	Truck	Crew	Truck	Crew	Truck	Crew	Truck	Crew	Truck	Crew	Truck	Crew
Route 4	Interstate 5 - Fresno Ave.			2.5	14.0	24.0	4.5	22.0	4.5	24.0	4.5	12.0		28	85
Route 4	Fresno Ave. - Roberts Island Rd.			2.5	14.0	24.0	4.5	22.0	4.5	24.0	4.5	12.0		28	85
Route 4	Roberts Island Rd. - Tracy Blvd.			2.5	14.0	24.0	4.5	22.0	4.5	24.0	4.5	12.0		28	85
Route 4	Tracy Blvd. - San Joaquin County Line			4.5	14.0	24.0	1.0	14.0	2.5	18.0	1.0	8.0		19	69
Route 4	San Joaquin County Line - Discovery Bay Blvd.			3.5	14.0	24.0	1.0	14.0	2.5	18.0	1.0	8.0		19	68
Route 4	Discovery Bay Blvd. - Byron Highway Junction			3.5	14.0	24.0	1.0	14.0	2.5	18.0	1.0	8.0		19	68
Byron Highway	Route 4 Junction - Diablo Rd.			2.0	18.0	40.0			2.0	10.0				13.0	20
Byron Highway	Diablo Rd. - Hot Springs Rd.			2.0	18.0	40.0			2.0	10.0				13.0	20
Byron Highway	Hot Springs Rd. - Mountain House Rd.			2.0	14.0	40.0			2.0	10.0				13.0	16
Byron Highway	Mountain House Rd. - Patterson Pass Rd.			2.0	14.0	40.0			1.0	10.0				13.0	15
Byron Highway	Patterson Pass Rd. - Corral Hollow Rd.			2.0	14.0	40.0			1.0	10.0				13.0	15
Interstate 205	I-5/205 Junction - Tracy Blvd.			2.0		20.0		18.0		25.0		10.0		29.0	0
Interstate 205	Tracy Blvd. - Patterson Blvd.					20.0				25.0				29.0	0
Route 120	Interstate 5 Junction - Yosemite Ave.			2.0		20.0		18.0		25.0		10.0		16.0	0
Interstate 5	County Club Blvd. - Charter Vy.											2.0	19.0	2	19
Interstate 5	Charter Vy. - French Camp											2.0	19.0	2	19
Interstate 5	French Camp - Lathrop Rd.											2.0	19.0	2	19
Interstate 5	Lathrop Rd. - Route 120 Junction											2.0	19.0	2	19
Interstate 5	Route 120 Junction - I-5/205 Junction			2.0		20.0		18.0		25.0		10.0		29.0	0
Tracy Blvd.	Route 4 - Clifton Court Rd.						5.5	36.0	3.0	30.0	4.5	20.0		13	86
Tracy Blvd.	Clifton Court Rd. - Grant Line Rd.						4.5	36.0	3.0	30.0	4.5	20.0		12	86
Tracy Blvd.	Grant Line Rd. - 11th St.						4.5	36.0	3.0	30.0	4.5	20.0		12	86

Table 16-5 Traffic Volumes and Level of Service - Existing Plus ISDP

Roadway	Segment	No. of Lane	Speed Limit (mph)	Type of Median	Roadway Classification	Average Daily Traffic				V/C Ratio (decimal)	Level Of Service
						Existing (vpd)	ISDP (vpd)	Existing + ISDP (vpd)	Capacity (vpd)		
Route 4	Interstate 5 - Fresno Ave.	3	55	TWLT	Highway	17,000	112	17,112	30,000	0.57	A
Route 4	Fresno Ave. - Roberts Island Rd.	2	55	Undivided	Highway	8,600	112	8,712	20,000	0.44	A
Route 4	Roberts Island Rd. - Tracy Blvd.	2	55	Undivided	Highway	6,000	112	6,112	20,000	0.31	A
Route 4	Tracy Blvd. - San Joaquin County Line	2	55	Undivided	Highway	5,900	87	5,987	20,000	0.30	A
Route 4	San Joaquin County Line - Discovery Bay Blvd.	2	55	Undivided	Highway	5,900	86	5,986	20,000	0.30	A
Route 4	Discovery Bay Blvd. - Byron Highway Junction	2	55	Undivided	Highway	16,000	86	16,086	20,000	0.80	D
Byron Highway	Route 4 Junction - Diablo Rd.	2	55	Undivided	Highway	11,800	85	11,885	20,000	0.59	A
Byron Highway	Diablo Rd. - Byron Hot Springs Rd.	2	55	Undivided	Highway	11,400	85	11,485	20,000	0.57	A
Byron Highway	Byron Hot Springs Rd. - Mountain House Rd.	2	55	Undivided	Highway	10,600	81	10,681	20,000	0.53	A
Byron Highway	Mountain House Rd. - Patterson Pass Rd.	2	55	Undivided	Highway	9,400	80	9,480	20,000	0.47	A
Byron Highway	Patterson Pass Rd. - Corral Hollow Rd.	2	55	Undivided	Highway	6,700	80	6,780	20,000	0.34	A
Interstate 205	I-5/205 Junction - Tracy Blvd.	4	65	Divided	Freeway	63,000	104	63,104	80,000	0.79	C
Interstate 205	Tracy Blvd. - Patterson Blvd.	4	65	Divided	Freeway	65,000	74	65,074	80,000	0.81	D
Route 120	Interstate 5 Junction - Yosemite Ave.	4	55	Divided	Freeway	42,000	91	42,091	80,000	0.53	A
Interstate 5	Country Club Blvd. - Charter Wy.	6	55	Divided	Freeway	99,000	21	99,021	120,000	0.83	D
Interstate 5	Charter Wy. - French Camp	6	55	Divided	Freeway	80,000	21	80,021	120,000	0.67	B
Interstate 5	French Camp - Lathrop Rd.	6	55	Divided	Freeway	63,000	21	63,021	120,000	0.53	A
Interstate 5	Lathrop Rd. - 120 Junction	6	55	Divided	Freeway	63,000	21	63,021	120,000	0.53	A
Interstate 5	Route 120 Junction - I-5/205 Junction	6	55	Divided	Freeway	92,000	104	92,104	120,000	0.77	C
Tracy Blvd.	Route 4 - Clifton Court Rd.	2	55	Undivided	Rural Road	1,350	99	1,449	20,000	0.07	A
Tracy Blvd.	Clifton Court Rd. - Grant Line Rd.	2	55	Undivided	Rural Road	3,190	98	3,288	20,000	0.16	A
Tracy Blvd.	Grant Line Rd. - 11th St.	5	35	TWLT	Arterial	3,400	98	3,498	30,000	0.12	A

TWLT = Two Way Left Turn

Assumptions: The compound growth rate is 0.05076/yr

Table 16-6 Traffic Volumes and Level of Service - ISDP Plus Projected Growth

Roadway	Segment	No. of Lane	Speed Limit (mph)	Type of Median	Roadway Classification	Average Daily Traffic				V/C Ratio (decimal)	Level of Service
						Existing (vpd)	ISDP (vpd)	Existing + ISDP with Growth Rate (vpd)	Capacity (vpd)		
Route 4	Interstate 5 - Fresno Ave.	3	55	TWLT	Highway	17,000	112	18,882	30,000	0.63	B
Route 4	Fresno Ave. - Roberts Island Rd.	2	55	Undivided	Highway	8,600	112	9,607	20,000	0.48	A
Route 4	Roberts Island Rd. - Tracy Blvd.	2	55	Undivided	Highway	6,000	112	6,737	20,000	0.34	A
Route 4	Tracy Blvd. - San Joaquin County Line	2	55	Undivided	Highway	5,900	87	6,601	20,000	0.33	A
Route 4	San Joaquin County Line - Discovery Bay Blvd.	2	55	Undivided	Highway	5,900	86	6,600	20,000	0.33	A
Route 4	Discovery Bay Blvd. - Byron Highway Junction	2	55	Undivided	Highway	16,000	86	17,752	20,000	0.89	D
Byron Highway	Route 4 Junction - Diablo Rd.	2	55	Undivided	Highway	11,800	85	13,113	20,000	0.66	B
Byron Highway	Diablo Rd. - Byron Hot Springs Rd.	2	55	Undivided	Highway	11,400	85	12,672	20,000	0.63	B
Byron Highway	Byron Hot Springs Rd. - Mountain House Rd.	2	55	Undivided	Highway	10,600	81	11,784	20,000	0.59	A
Byron Highway	Mountain House Rd. - Patterson Pass Rd.	2	55	Undivided	Highway	9,400	80	10,459	20,000	0.52	A
Byron Highway	Patterson Pass Rd. - Corral Hollow Rd.	2	55	Undivided	Highway	6,700	80	7,477	20,000	0.37	A
Interstate 205	I-5/205 Junction - Tracy Blvd.	4	65	Divided	Freeway	63,000	104	69,662	80,000	0.87	D
Interstate 205	Tracy Blvd. - Patterson Blvd.	4	65	Divided	Freeway	65,000	74	71,840	80,000	0.90	D
Route 120	Interstate 5 Junction - Yosemite Ave.	4	55	Divided	Freeway	42,000	91	46,463	80,000	0.58	A
Interstate 5	Country Club Blvd. - Charter Wy.	6	55	Divided	Freeway	99,000	21	109,327	120,000	0.91	E
Interstate 5	Charter Wy. - French Camp	6	55	Divided	Freeway	80,000	21	88,349	120,000	0.74	C
Interstate 5	French Camp - Lathrop Rd.	6	55	Divided	Freeway	63,000	21	69,579	120,000	0.58	A
Interstate 5	Lathrop Rd. - Route 120 Junction	6	55	Divided	Freeway	63,000	21	69,579	120,000	0.58	A
Interstate 5	Route 120 Junction - I-5/205 Junction	6	55	Divided	Freeway	92,000	104	101,681	120,000	0.85	D
Tracy Blvd.	Route 4 - Clifton Court Rd.	2	55	Undivided	Rural Road	1,350	99	1,590	20,000	0.08	A
Tracy Blvd.	Clifton Court Rd. - Grant Line Rd.	2	55	Undivided	Rural Road	3,190	98	3,620	20,000	0.18	A
Tracy Blvd.	Grant Line Rd. - 11th St.	5	35	TWLT	Arterial	3,400	98	3,852	30,000	0.13	A

TWLT = Two Way Left Turn

Assumptions: The compound growth rate is 0.05076/yr

16.3.3 Effects Upon Navigation

The construction and operation of the proposed ISDP facilities would affect the movement of small craft in several adjacent waterways. The following discusses the potential effects, organized by facility.

Intake at Clifton Court Forebay. A new intake would be constructed at Clifton Court Forebay, within the existing forebay embankment, about 0.25 miles inland from West Canal. A channel would be constructed from West Canal to the new intake structure. The new levees would be constructed of sand, gravel, and rock, brought in to the site by truck. The construction period would last approximately 36 months with a construction crew of about 100 people. A barge and as many as four workboats would operate in West Canal for this construction. The operation of these vessels for construction is not expected to prevent safe navigation through West Canal and the adjacent waterways. Therefore, no significant adverse impacts upon navigation would occur as a result of the proposed construction.

The proposed Clifton Court Forebay intake would be opened during periods of high water to allow water to enter the forebay, and then closed as the high water recedes. The currents associated with the intake are not strong enough to cause a hazard to boating, so that boats are not expected to be drawn into the forebay. The proposed intake would be well marked to discourage unauthorized entry. Accordingly, no significant adverse impacts upon navigation would occur as a result of the proposed operation of the new intake.

Dredging of Old River. As proposed, approximately 1.25 million cubic yards of material would be dredged and hydraulically pumped from a 4.9-mile reach of Old River and deposited on Victoria Island in settling ponds. A dredging vessel and up to four workboats are to be used during the dredging period. The actual dredging would occur only from about August to mid-October to avoid impacts to delta smelt and winter run Chinook salmon, but over a three year period. The dredging vessel and workboats would not prevent safe navigation of the Old River, and, as such, no significant adverse impacts upon navigation are expected to result from the dredging of Old River. The same would be true for the Byron Tract alternative dredge disposal site.

If the Twitchell Island alternative dredge disposal site were used, the dredging would take place with a barge mounted mechanical dredger, either a clamshell or dragline dredger. Material would be loaded onto barges and towed the 25 miles to Twitchell Island. This alternative has the potential to impact navigation along the rivers and channels of this route. The August to October dredging period is a busy time for recreational boating in the Delta area according to the DWR boating surveys (DWR 1996). However, work would be scheduled during the week, rather than during the busy weekends.

Middle River Control Structure. Navigation along the 10.0 mile-long stretch of the Middle River from about the Borden Highway Bridge at Victoria Canal and Trapper Slough to the confluence of Middle River with Old River would be affected by the construction of the Middle River barrier. The construction of the barrier would likely severely limit navigation, and once construction is complete, the barrier would prevent navigation. Boat ramps are to be constructed

and used to transfer small craft from one side of the barrier to the other to allow access to Middle River. This portion of Middle River is little used by small craft due to the occurrence of shallows and abundant snags. The barrier is not considered to have a significant adverse impact upon navigation because of the infrequent use of the river in this location.

The 19.0-mile stretch of Old River from the Delta-Mendota Canal to the confluence of Old River and the San Joaquin River would be interrupted by the construction of the two barriers, one near the Delta-Mendota Canal, and the other at the confluence with the San Joaquin River, as discussed in the following.

Old River Fish Control Structure. A flow control structure will be constructed at the confluence of the head of Old River and the San Joaquin River. The construction of the barrier would be expected to severely limit or prevent navigation at this location for the 30-month long construction period. Thereafter, the barrier would prevent navigation during its operational period, from April 16th through May, and October through November, but would allow navigation the rest of the year. Boat docking facilities, stairs, and a jib crane would be constructed and operated to transfer boats from one side of the barrier to the other. Notwithstanding the availability of the docks, stairs, and jib crane, the creation of a seasonal barrier to navigation is considered to be an unavoidable significant adverse impact of ISDP.

Old River Flow Control Structure East of the Delta-Mendota Canal. The construction period for the control structure and associated boat lock would last approximately 30 months. Navigation is expected to be severely limited or prevented during the 30-month construction period. This is considered to result in a significant adverse impact upon navigation. Once constructed, the barrier would allow passage through a boat lock. Notwithstanding the availability of a boat lock, the creation of a barrier to navigation is considered to be an unavoidable significant adverse impact of ISDP.

Grant Line Canal Flow Control Structure. The Grant Line barrier would be located at the confluence of Grant Line Canal and Old River, and the western end of a 8.0-mile-long stretch of Grant Line Canal, from Old River to the Holly Sugar Factory also at Old River. The proposed boat lock would be constructed first, followed by the construction of the radial gate structure and the other components of the barrier, in several phases over the 36-month construction period. The boat lock would be available early in the construction period, and then would be available during the operation of the structure to allow boat passage. Notwithstanding the availability of a boat lock, the creation of a barrier to navigation is considered an unavoidable significant adverse impact of ISDP.

16.3.4 Effects Upon Transportation

The 36-month construction period for the proposed project facilities would cause a temporary increase in traffic on local roadways, and on the adjacent State and Interstate highways. The traffic associated with the construction of each of the ISDP facilities is described in the following.

Clifton Court Forebay Northern Intake. The construction of the proposed ISDP intake structure would involve the transportation of equipment and construction personnel on Byron Highway to Clifton Court Road, accessing Byron Highway either from Interstate 205, or from Highway 4. The construction would take place over 36 months, and would involve 33 truckloads per day and 80 other vehicle trips per day, for a total of 113 vehicles per day (Tables 16-3 and 16-4).

Old River Dredging. The proposed dredging in the Old River, between North Victoria Canal and Clifton Court Forebay, would involve a minimal number of truck trips required to transport the pipeline construction materials and equipment to the site. It would also involve construction personnel commuter traffic during the 24-month period of dredging activity. The access to the dredging site would be gained through private roads from Highway 4. The dredge spoils would be transported to Victoria Island using a pipeline constructed for that purpose. The dredging would take place over 24 months, and would involve eight vehicle trips per day for the construction crew (Tables 16-3 and 16-4). There would be only two truck deliveries during the 24-month construction period.

Old River Fish Control Structure. The construction of the Old River fish control structure would involve the transportation of equipment and construction personnel on San Joaquin Road, from Interstate 205. The construction of this facility would take place over 30 months, and would involve three truckloads per day and 64 other vehicle trips per day, for a total of 67 vpd (Tables 16-3 and 16-4).

Middle River Flow Control Structure. The construction of the Middle River flow control structure would involve the transportation of equipment and construction personnel on Tracy Boulevard, north to Clifton Court Road, west to Calpack Road, and north to the construction site. The construction of this facility would take place over 18 months, and would involve 11 truckloads per day and 40 other vehicle trips per day, for a total of 51 vpd (Tables 16-3 and 16-4).

Grant Line Canal Flow Control Structure. The construction of the Grant Line Canal flow control structure would involve the transportation of equipment and construction personnel on Tracy Boulevard and Clifton Court Road. The construction of this facility would take place over 36 months, and would involve 11 truckloads per day and 72 other vehicle trips per day, for a total of 83 vpd (Tables 16-3 and 16-4).

Old River Flow Control Structure. The construction of the Old River flow control structure, near the Delta-Mendota Canal, would involve the transportation of equipment and construction personnel on Tracy Boulevard and Finck Road. The construction of this facility would take place over 30 months, and would involve seven truckloads per day and 80 other vehicle trips per day, for a total of 87 vpd (Tables 16-3 and 16-4).

- *Roadway Traffic Conditions*

Implementation of the proposed project would add a maximum of 408 vehicles per day (64 truck trips plus 344 commute trips) to area roadways. Construction traffic would add a maximum of about 112 vehicles per day (vpd) to Highway 4, 85 vpd to Byron Highway, 104 vpd to I-205 and

I-5, and 99 vpd to Tracy Boulevard. The greatest amount of construction traffic (51 percent) would be associated with the Clifton Court Forebay northern intake. At the opposite end of the spectrum, Old River dredging would only contribute about eight vpd to area traffic. Table 16-3 shows the duration of construction activity for each project element, and the amount of truck and employee traffic on a typical weekday. This maximum level of construction traffic would occur over an 18-month period, when all of the facilities are simultaneously under construction. The other 18 months of construction would be characterized by fewer vehicles per day, decreasing to a minimum of 196 construction-related vehicles per day for a period of six months. The following discussion of impacts is based upon 408 construction-related vehicles per day.

Existing Conditions Plus Construction Traffic. All south Delta roadways studied are currently operating at acceptable or better levels of service. The addition of construction traffic associated with the proposed ISDP facilities would not alter the level of service on any project area roadways. This is considered a less-than-significant adverse impact.

The greatest construction-related change in V/C ratio would occur on Highway 4 between Fresno Avenue and Tracy Boulevard. The additional 112 vpd associated with the ISDP would increase the V/C ratio by approximately .0056 on that roadway segment. Changes to the V/C ratio on other studied roadways ranged from increases of .0012 to .005, with most roadways experiencing increases of approximately .004. As none of these increases in V/C ratio would even approach the significance criteria of 0.02, nor occur at intersections operating below LOS C conditions, this is considered a less-than-significant adverse impact.

Cumulative Conditions Plus Construction Traffic. Under the projected background conditions, all roadway segments except one would operate at acceptable or better levels of service throughout the duration of ISDP construction. The only exception to this situation would occur on I-5 between Country Club Boulevard and Charter Way, where traffic conditions are expected to reach LOS E. The addition of project-related construction traffic would not alter the level of service on this roadway segment. This is considered a less-than-significant adverse impact.

As with existing traffic conditions, the greatest construction-related change in V/C ratio under cumulative conditions would occur on Highway 4 between Fresno Avenue and Tracy Boulevard. The additional 112 vpd associated with the ISDP would increase the V/C ratio by approximately .0056 on that roadway segment. Changes to the V/C ratio on other studied roadways ranged from increases of .0012 to .005, with most roadways experiencing increases of approximately .004. As none of the likely increases in V/C ratio even approaches the significance criteria of 0.02, nor occurs at intersections operating below LOS C conditions, this is considered a less-than-significant adverse impact.

- *Traffic Hazards*

Bicyclist Safety. The construction-related truck traffic on Byron Highway has the potential to inadvertently leave debris in the Class II bike lane. The debris, which could include spilled construction materials such as aggregate or sand, or dirt tracked up from private access roads, would be creating a potential hazard to cyclists. This is considered a significant adverse impact.

Motorist Safety. Although the construction-related traffic would not cause decreases in the levels of service of the affected roadways, the presence of numerous slow-moving trucks would represent a safety hazard. This hazard would be apparent on Highway 4, Byron Highway, Tracy Boulevard, and Clifton Court Road. This is considered a significant adverse impact.

16.4 Mitigation Measures

16.4.1 Byron Highway Bike Lane Cleanup

To minimize bicycle safety hazards within the Byron Highway bike lane, the contractor should regularly inspect the bike path and traveled way throughout the duration of construction activity. The contractor should maintain the bike path and traveled way in a clear condition with a scraper, street sweeper, or equivalent method, as necessary to assure safety. Implementation of this mitigation measure would reduce this adverse impact to a less-than-significant level.

16.4.2 Warning Signs

To minimize safety hazards to motorists in the ISDP construction traffic routes, the contractor should install "TRUCK CROSSING" warning signs in advance of each access point to alert drivers to the presence of slow-moving trucks. These signs should be maintained for the duration of construction activity. Implementation of this mitigation measure would reduce this adverse impact to a less-than-significant level.

16.5 Comparative Evaluation Of The Alternatives

16.5.1 Enlargement Of Clifton Court Forebay, Construction Of Two Intake Structures, Increased Export Capability, And Construction Of Permanent Barriers

This alternative, the original South Delta Water Management Program preferred alternative, would include five project components. This alternative would include the construction and operation of the barriers proposed as a part of ISDP. Accordingly, this alternative would have the same barrier-related construction and operational effects upon navigation and transportation, including hazards to bicyclists and motorists. However, this alternative would include larger-scale construction efforts in the vicinity of Clifton Court Forebay.

This alternative would include a major enlargement of the Clifton Court Forebay, from its current area of 2,100 surface acres to more than 5,000 surface acres. The north half of Victoria Island and the remaining area of Clifton Court Tract would be used to enlarge the forebay. A portion of Byron Tract south of Highway 4, adjacent to Italian Slough, would be used to hydraulically connect the existing forebay to the new area. The enlarged forebay would require an estimated 150,000 cubic yards of excavation, six million cubic yards of embankment material and 600,000 tons of riprap material to construct 19 miles of dam embankment. About six million cubic yards of borrow materials would be imported for the construction.

Two new intake structures would be constructed on the north end of the expanded forebay. One intake structure would be located at the confluence of North Victoria Canal and Middle River. The second intake structure would be located at the confluence of North Victoria Canal and Old River. These intakes would have the same configuration as the existing Clifton Court Forebay intake and the new intake proposed for ISDP.

Roadway Traffic Conditions. The construction traffic associated with this alternative would be more than twice the traffic that would be generated by the construction of ISDP. This larger-scale alternative would add a maximum of about 132 vpd to Highway 4, 73 vpd to Byron Highway, 110 vpd to I-5, and 99 vpd to Tracy Boulevard. The total daily truck traffic generated by construction of this alternative would be 797 trucks per day on a typical weekday, plus 388 commute trips per day. About 75 percent of the total construction traffic would be associated with the enlargement of Clifton Court Forebay. Although this would be a larger construction effort than ISDP, the numbers of vehicle trips would still be a small proportion of the total traffic in the area. Accordingly, all of the adjacent roadways would continue to operate at acceptable levels of service: county and city roads would operate at LOS C or better; and all freeway and highway segments would operate at LOS D or better. This is considered a less-than-significant adverse impact.

Similar to ISDP, once future area-wide traffic growth is factored in for the duration of the construction period, the segment of I-5 between Country Club Boulevard and Charter Way would operate at an unacceptable LOS E. This condition would occur with or without the addition of the alternative's construction traffic. Consequently, this is considered a less-than-significant adverse impact.

- *Mitigation Measures*

Bicyclist Safety. To minimize bicycle safety hazards within the Byron Highway bike lane, the contractor should regularly inspect the bike path and traveled way throughout the duration of construction activity. The contractor should maintain the bike path and traveled way in a clear condition with a scraper, street sweeper, or equivalent method, as necessary to assure safety. Implementation of this mitigation measure would reduce this adverse impact to a less-than-significant level.

Motorist Safety. To minimize safety hazards to motorists in the ISDP construction traffic routes, the contractor should install "TRUCK CROSSING" warning signs in advance of each access point to alert drivers to the presence of slow-moving trucks. These signs should be maintained for the duration of construction activity. Implementation of this mitigation measure would reduce this adverse impact to a less-than-significant level.

16.5.2 Reduction Of CVP/SWP Exports And Management Or Reduction Of Demand For SWP Water

This alternative would involve a reduction in the amount of water exported to SWP water users, along with the implementation of measures in the service areas to either better manage the available water or to reduce the demand for water. The project facilities proposed for ISDP would not be constructed or operated. There would be no effects upon navigation or transportation as a result of the implementation of this alternative.

16.5.3 Modification Of CVP/SWP Exports, Consolidation Of Agricultural Diversions, Extension Of Existing Agricultural Diversions, And Increased Pumping At Harvey O. Banks Up To 10,300 cfs.

This alternative would include the ISDP actions involving the dredging of 4.9 miles of Old River and the construction and operation of a new intake facility at Clifton Court Forebay. However, under this alternative, the construction and operation of the ISDP flow and fish barriers would not occur. Instead, the alternative would include the consolidation and extension of agricultural diversions and additional dredging of Paradise Cut, Middle River, and Old River. The following is a discussion of impacts expected to occur with the construction and operation of the consolidated and extended agricultural diversions.

Roadway Traffic Conditions. The construction activities associated with the ISDP fish and flow control structures would not occur under this alternative. The roadway traffic associated with the consolidation of the agricultural diversions could slightly increase vehicular movement in those areas; however, roadways are operating substantially below capacity, and the increase is expected to be minimal. Furthermore, the proposed facilities would not cross any railroad lines, nor affect air or public transportation.

Traffic Hazards. Construction of consolidated agricultural diversion facilities around the island perimeters would temporarily affect roadways in the immediate construction vicinity. Construction-related traffic entering and exiting area roadways could pose hazards to motorists. This is considered a significant impact.

Navigation. The dredging vessel and work boats associated with the additional dredging under this alternative would not prevent safe navigation, and as such, no significant adverse impacts are expected upon navigation.

16.5.4 ISDP Project With An Additional Clifton Court Forebay Intake At Italian Slough

This alternative would include all of the proposed components of the ISDP project, with the addition of a new intake at Italian Slough. Accordingly, this alternative would include two proposed intakes, one at Italian Slough and one at the northeastern corner of Clifton Court Forebay. All of the navigation and transportation impacts associated with the ISDP would occur

under this alternative, including adverse effects on bicyclist and motorist safety. The following discussion outlines effects of this alternative that differ from those of the ISDP.

Roadway Traffic Conditions. Construction traffic would add a maximum of about 131 vpd to State Route 4, 112 vpd to Byron Highway, 113 vpd to I-5, and 99 vpd to Tracy Boulevard. The total daily truck traffic generated by construction of this alternative would be 84 trucks per day on a typical weekday, plus 376 commute trips per day. All county and city roads would operate at LOS C or better; all freeway and highway segments would operate at LOS D or better. This is considered a less-than-significant adverse impact.

With area-wide traffic growth considered, one segment of I-5 would operate at LOS E, and all other studied segments would continue to operate at acceptable levels of service. These conditions would occur with or without the presence of this alternative's construction-related traffic. Consequently, this is considered a less-than-significant adverse impact.

- *Mitigation Measures*

Bicyclist Safety. To minimize bicycle safety hazards within the Byron Highway bike lane, the contractor should regularly inspect the bike path and traveled way throughout the duration of construction activity. The contractor should maintain the bike path and traveled way in a clear condition with a scraper, street sweeper, or equivalent method, as necessary to assure safety. Implementation of this mitigation measure would reduce this adverse impact to a less-than-significant level.

Motorist Safety. To minimize safety hazards to motorists in the ISDP construction traffic routes, the contractor should install "TRUCK CROSSING" warning signs in advance of each access point to alert drivers to the presence of slow-moving trucks. These signs should be maintained for the duration of construction activity. Implementation of this mitigation measure would reduce this adverse impact to a less-than-significant level.

16.5.5 ISDP Without The Northern Intake, And With An Expanded Existing Intake

This alternative would include all of the proposed components of the ISDP project, except the existing Clifton Court Forebay intake would be expanded to accommodate the additional flow, instead of constructing a new intake either at Italian Slough or at the northeastern corner of Clifton Court Forebay. Accordingly, implementation of this alternative would result in all of the navigation and transportation impacts associated with the ISDP, including adverse effects on bicyclist and motorist safety. The following discussion outlines effects of this alternative that differ from those of the ISDP.

Roadway Traffic Conditions. Construction traffic would add a maximum of about 95 vpd to State Route 4, 59 vpd to Byron Highway, 96 vpd to I-5, and 129 vpd to Tracy Boulevard. The total daily truck traffic generated by construction of this alternative would be 43 trucks per day on a typical weekday, plus 312 commute trips per day. All county and city roads would operate

at LOS C or better; all freeway and highway segments would operate at LOS D or better. This is considered a less-than-significant adverse impact.

With the area-wide traffic growth considered, one segment of I-5 would operate at LOS E, and all other studied segments would continue to operate at acceptable levels of service. These conditions would occur regardless of the implementation of this alternative. Consequently, this is considered a less-than-significant adverse impact.

- *Mitigation Measures*

Bicyclist Safety. To minimize bicycle safety hazards within the Byron Highway bike lane, the contractor should regularly inspect the bike path and traveled way throughout the duration of construction activity. The contractor should maintain the bike path and traveled way in a clear condition with a scraper, street sweeper, or equivalent method, as necessary to assure safety. Implementation of this mitigation measure would reduce this adverse impact to a less-than-significant level.

Motorist Safety. To minimize safety hazards to motorists in the ISDP construction traffic routes, the contractor should install "TRUCK CROSSING" warning signs in advance of each access point to alert drivers to the presence of slow-moving trucks. These signs should be maintained for the duration of construction activity. Implementation of this mitigation measure would reduce this adverse impact to a less-than-significant level.

16.5.6 No Action (Maintain Existing Conditions)

This alternative would involve the maintenance of the environmental conditions as they exist at present. The ISDP project would not be approved and would not be constructed. The potential adverse environmental effects of the ISDP project would not occur, nor would the potential water supply, water quality, and environmental benefits occur.

The implementation of this alternative would maintain existing conditions in the south Delta. Consequently, this alternative would not involve construction activities that might conflict with navigation or that might add any vehicles to area roadways, and no new facilities would be present to affect the ease of navigation. Accordingly, there would be no project-related effects upon transportation or navigation.

16.5.7 No Action (Maintain Conditions As They Would Exist In The Future)

This alternative would involve the maintenance of the environmental conditions as they will exist in the future, without the construction and operation of ISDP. The implementation of this alternative would not involve construction activities that might conflict with navigation or that might add any vehicles to area roadways, and no new facilities would be present to affect the ease of navigation. Accordingly, there would be no project-related effects upon transportation or

navigation. The transportation and navigation conditions would either stay the same or change, without being influenced by the construction and operation of ISDP.